CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID/IC TEST REPORT

TEST REPORT NUMBER : CGZ3160104-00007-EFI

CENTRE OF TESTING SERVICE CO., LTD.

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

TEST REPORT For FCC ID/IC
RSS-247:Issue 1
47 CFR PART 15 OCT, 2015

Report Reference No.	CGZ3160104-00007-EFI
Date of issue	22 March 2016
**Testing Laboratory Name ..... **	**CENTRE OF TESTING SERVICE CO., LTD.**
Address	A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Testing location/ procedure	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
**Applicant's name ..... **	WigWag Inc
Address	4009 Banister Lane, Suite 200,Austin, TX 78704 United States
**Test specification ..... **	
Standard	**47 CFR PART 15 OCT, 2015; RSS-247:Issue 1, RSS-Gen:Issue 4**
Test Report Form No.	CTSEMC-1.0
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.
Master TRF	Dated 2009-01

**Test item description..... **	6BEE
Trade Mark.....	Wigwag
Manufacturer.....	WigWag Inc
Model/Type reference.....	6B_CC2530V3
Ratings.....	DC 3.3V
Operating Frequency	2405~2475MHz
Result	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Kate zhang / Fileadministrators	Duke yang / Technique principal	Vincent yao / Manager

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

FCC ID/IC -- T E S T R E P O R T

Test Report No. : CGZ3160104-00007-EFI	22 March 2016 Date of issue

Type / Model.....	6B_CC2530V3
EUT.....	6BEE
Applicant……	WigWag Inc
Address.....	4009 Banister Lane, Suite 200,Austin, TX 78704 United States
Telephone.....	+1-512-649-2188
Fax.....	+1-512-297-4820
Contact.....	Travis R McCollum
Manufacturer……	WigWag Inc
Address.....	4009 Banister Lane, Suite 200,Austin, TX 78704 United States
Telephone.....	+1-512-649-2188
Fax.....	+1-512-297-4820
Contact.....	Travis R McCollum
Factory……	WigWag Inc
Address.....	4009 Banister Lane, Suite 200,Austin, TX 78704 United States
Telephone.....	+1-512-649-2188
Fax.....	+1-512-297-4820
Contact.....	Travis R McCollum

Test Result according to the standards on page 1: **PASSED**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

TABLE OF CONTENTS

Description **Page**

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

1.0 TEST STANDARDS

The tests were performed according to following standards:

- **47 CFR PART 15 OCT, 2015**
- **RSS-247:Issue 1**
- **RSS-Gen:Issue 4**
- **ANSI C63.10:2013**

2.0 SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	04 January 2016
Testing commenced on	04 January~22 March 2016
Testing concluded on	22 March 2016

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

■ - fulfilled.
□ - **not** fulfilled.
The equipment under test
■ - fulfils the FCC/IC requirements cited on page 1.
□ - **does not** fulfil the FCC/IC requirements cited on page 1.

3.0 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : ■ DC 3.3V by jig;
Jig DC 5V power supply by Notebook

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: **1**
Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:
□ - Standby
☐ TX- Y position
☐ TX- Zposition
■ TX- X position

IEEE802.15.4 :Low CH (2405.0MHz) , Middle CH (2445.0MHz),
High CH (2475.0MHz)

Note:Operation mode TX -X position of EUT is the radiated test worst case. So only these test results be recorded in the test report.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

3.4 EUT configuration

3.4.1. Description of configuration (EUT)

Description	:	6BEE
Model Number	:	6B_CC2530V3
Operation frequency	:	2405~2475 MHz
Zigbee	:	IEEE802.15.4
Modulation Technology	:	DSSS, OQPSK

3.4.2. Tested Supporting System Details

N/A

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

4.0 TEST ENVIRONMENT

4.1 Address of the test laboratory

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406

4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

■ - The black square indicates that the listed condition, standard or equipment is applicable for this report.
□ - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

(1).This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5.0 Summary of standards and results

5.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Conducted Emission Test	FCC Part 15 : 15.207 RSS-Gen:Issue 4§8.8 ANSI C63.10:2013	PASSED
6dB Bandwidth Measurement	FCC Part 15.247(a)(2) RSS-247:Issue 1 §5.2(1) ANSI C63.10:2013	PASSED
Peak Power	FCC Part 15.247(b)(3) RSS-247:Issue 1 §5.4(4) ANSI C63.10:2013	PASSED
Peak Power Spectral Density	15.247(e) Power Density RSS-247:Issue 1 §5.2(2) ANSI C63.10:2013	PASSED
Band edges measurement	FCC Part 15.247(d) RSS-247:Issue 1 §5.5 ANSI C63.10:2013	PASSED
Spurious Emissions	FCC Part 15: 15.209 RSS-Gen:Issue 4§6.13 ANSI C63.10:2013	PASSED
Receiver Spurious Emission	RSS-Gen:Issue 4§7.0 ANSI C63.10:2013	PASSED
99% Occupied Bandwidth	RSS-Gen Issue 4§6.6 ANSI C63.10:2013	PASSED
Antenna Requirements	FCC Part 15: 15.203 ANSI C63.10:2013	PASSED
N/A is an abbreviation for Not Applicable.		

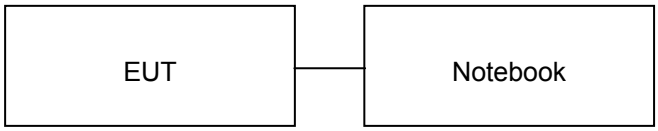
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

6.0 Power Line Conducted Emission Test

6.1.Test Equipment

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2015/10
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2015/10
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2015/10
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2015/10
5	EMI Test Software	EZ-EMC	Farad	N/A	N/A

6.2. Block Diagram of Test Setup



(EUT: 6BEE***)***

6.3. Power Line Conducted Emission Test Limits

Standard: FCC Part 15:15.207, RSS-Gen:Issue 4§8.8, ANSI C63.10:2013

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.4.Test Procedure

The Notebook Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

6.5. Power Line Conducted Emission Test Results

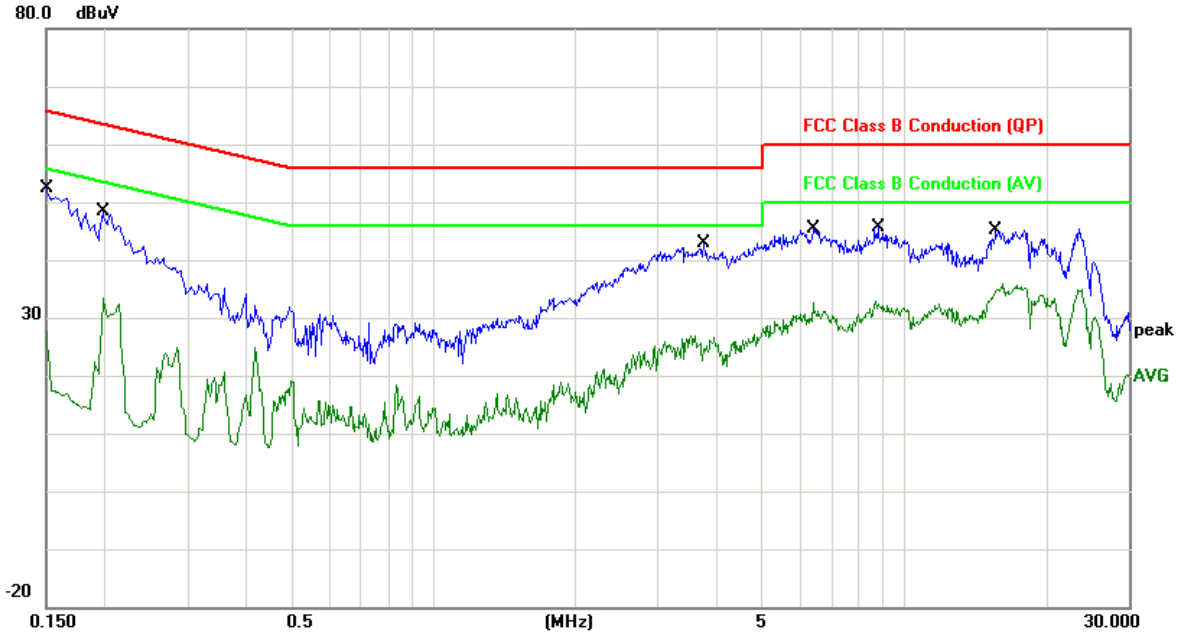
PASSED.

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Test point:	L	Result:	■ - passed
Frequency range:	0.15MHz~30MHz		□ - not passed

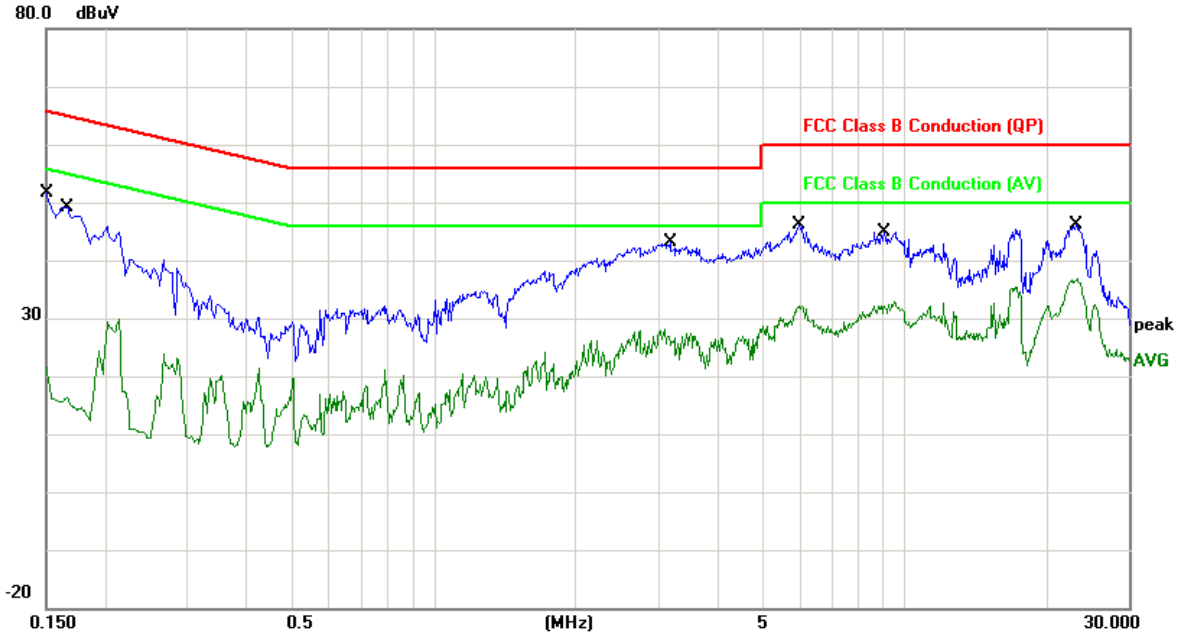
EUT	6BEE
Operating Condition	TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	04~06 January 2015
Operator	**Duke**
MODEL NO	6B_CC2530V3



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1500	10.82	34.60	45.42	65.99	-20.57	QP
2	0.1500	10.82	12.95	23.77	55.99	-32.22	AVG
3	0.1980	10.83	34.09	44.92	63.69	-18.77	QP
4	0.1980	10.83	16.35	27.18	53.69	-26.51	AVG
5	3.7460	11.02	27.65	38.67	56.00	-17.33	QP
6	3.7460	11.02	13.12	24.14	46.00	-21.86	AVG
7	6.4180	11.13	27.52	38.65	60.00	-21.35	QP
8	6.4180	11.13	17.48	28.61	50.00	-21.39	AVG
9	8.8180	11.20	26.35	37.55	60.00	-22.45	QP
10	8.8180	11.20	18.31	29.51	50.00	-20.49	AVG
11	15.6620	11.00	22.47	33.47	60.00	-26.53	QP
12	15.6620	11.00	17.37	28.37	50.00	-21.63	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test point:	N	Result:	■ - passed □ - not passed
Frequency range:	0.15MHz~30MHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1500	10.80	31.05	41.85	65.99	-24.14	QP
2	0.1500	10.80	10.72	21.52	55.99	-34.47	AVG
3	0.1660	10.80	27.94	38.74	65.15	-26.41	QP
4	0.1660	10.80	3.63	14.43	55.15	-40.72	AVG
5	3.1860	10.98	28.00	38.98	56.00	-17.02	QP
6	3.1860	10.98	14.31	25.29	46.00	-20.71	AVG
7	5.9860	11.09	28.92	40.01	60.00	-19.99	QP
8	5.9860	11.09	18.87	29.96	50.00	-20.04	AVG
9	9.0820	11.16	26.44	37.60	60.00	-22.40	QP
10	9.0820	11.16	18.10	29.26	50.00	-20.74	AVG
11	23.1780	11.06	28.83	39.89	60.00	-20.11	QP
12	23.1780	11.06	24.67	35.73	50.00	-14.27	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Note:Level=Reading+Factor. Margin= Level-Limit

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

7.0 6dB BANDWIDTH MEASUREMENT

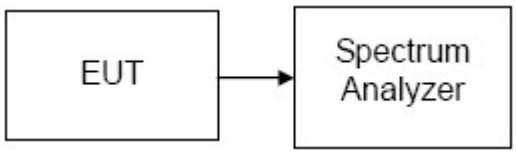
7.1 LIMITS

According to §15.247(a)(2) and RSS-247:Issue 1 §5.2(1), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 MEASUREMENT EQUIPMENT USED

20dB Bandwidth					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03

7.3 TEST CONFIGURATION



7.4 TEST PROCEDURE

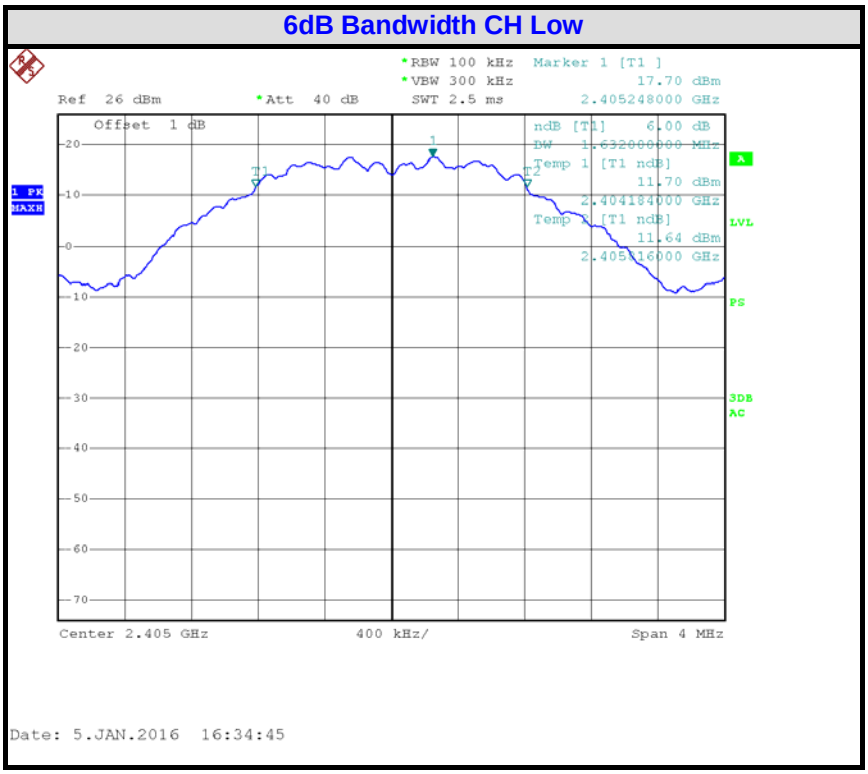
1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span =1.5 times of bandwidth, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated

7.5 TEST RESULTS

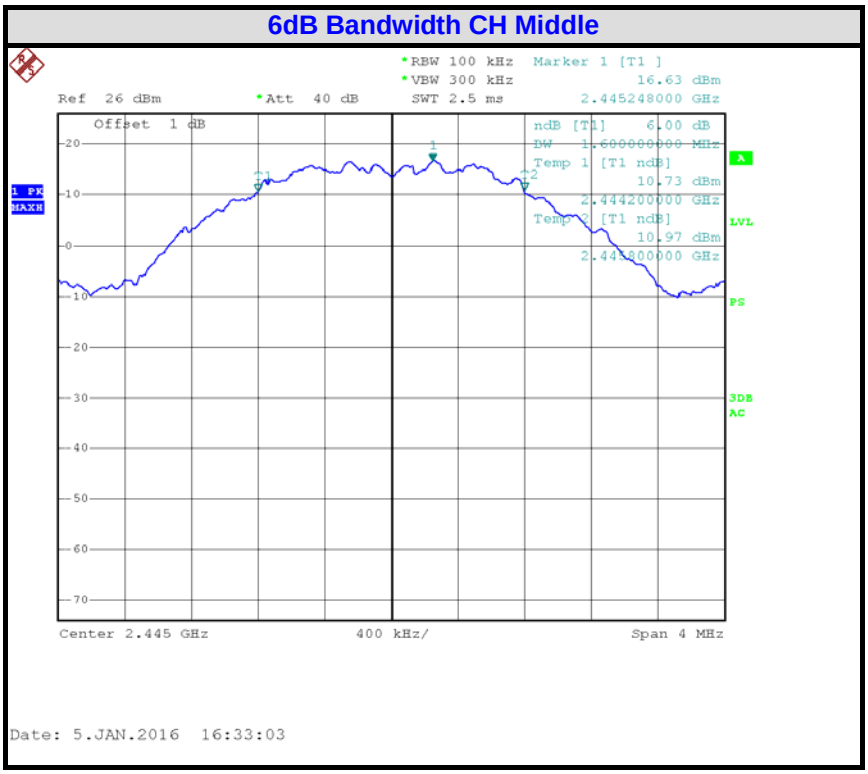
Modulation Standard	Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (KHz)	Result
OQPSK	Low	2405	1.632	>500	PASSED
	Middle	2445	1.600		PASSED
	High	2475	1.600		PASSED
Remark:The Bandwidth is Delta 2 of following the graph. And the Delta 2 is Marker 2 subtract Marker 1.					

Test Plot

6dB Bandwidth CH Low

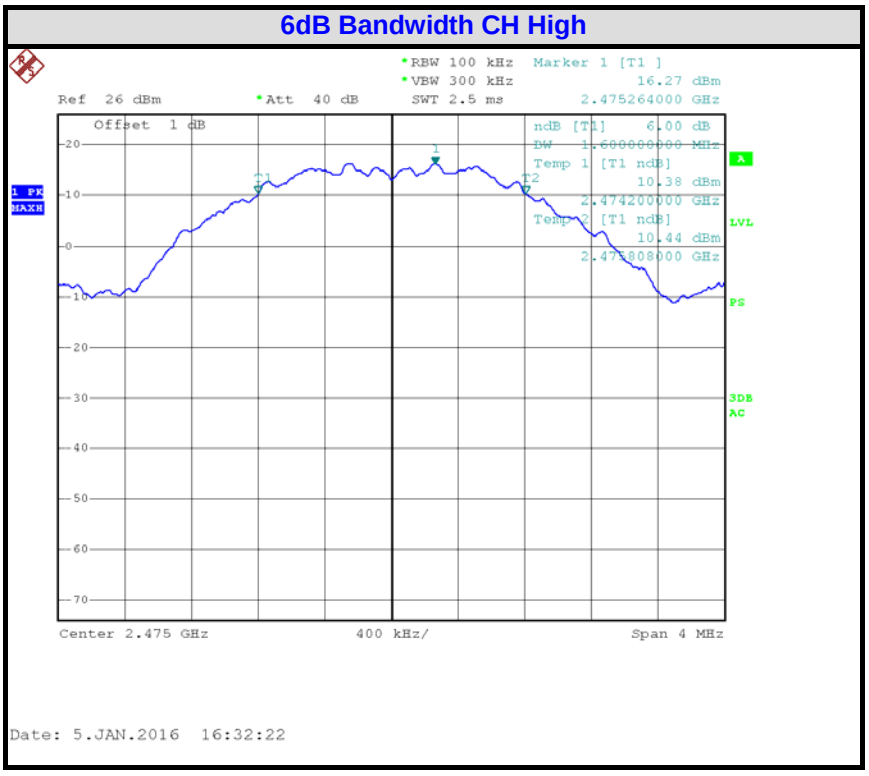


6dB Bandwidth CH Middle



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

6dB Bandwidth CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

8.0 PEAK POWER

8.1 LIMIT

According to §15.247(b)(3) and RSS-247:Issue 1 §5.4(4), The maximum peak output power of the intentional radiator shall not exceed the following:

(1) For frequency hopping systems operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W if the hopset uses 50 or more hopping channels; the maximum peak conducted output power shall not exceed 0.25 W, and the e.i.r.p. shall not exceed 1 W if the hopset uses less than 50 hopping channels.

(2) For frequency hopping systems operating in the band 2400-2483.5 MHz and employing at least 75 hopping channels, the maximum peak conducted output power shall not exceed 1 W; for all other frequency hopping systems in the band, the maximum peak conducted output power shall not exceed 0.125 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

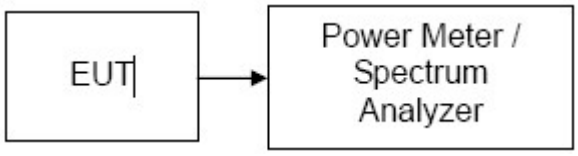
(3) For frequency hopping systems operating in the band 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

(4) For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

8.2 MEASUREMENT EQUIPMENT USED

Peak Power					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03
2	Power meter	ROHDE & SCHWARZ	NRVS	842856/049	2015/03

8.3 TEST CONDIGURATION



8.4 TEST PROCEDURE

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 3 MHz.
3. Set VBW ≥ 10 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power Intervals, the trigger may be set to “free run”.
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

8.5 TEST RESULTS

Passed

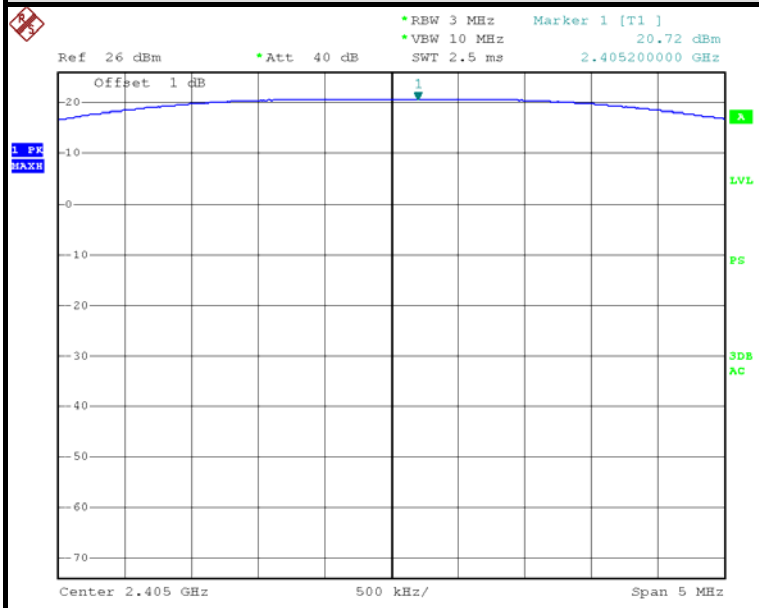
Test Data

Modulation Standard	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
OQPSK	Low	2405	20.72	30dBm	PASSED
	Middle	2445	20.14		PASSED
	High	2475	19.77		PASSED

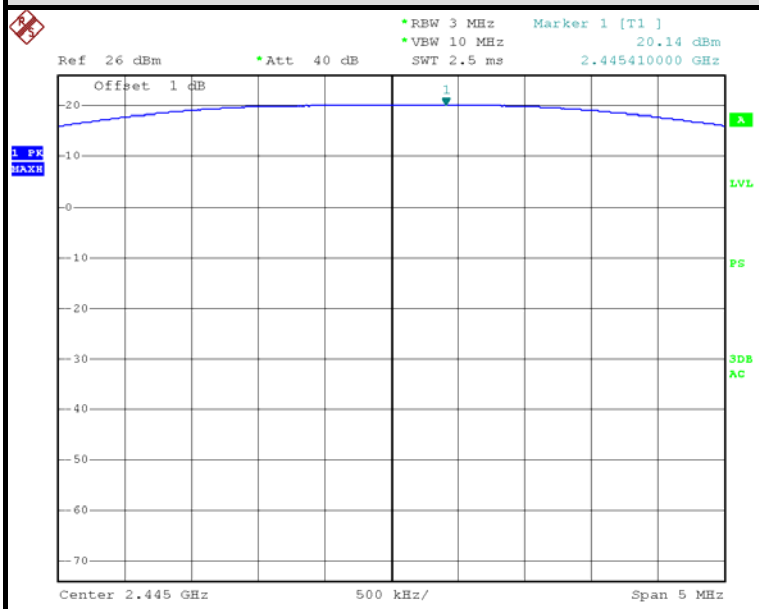
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Plot

Peak Power CH Low

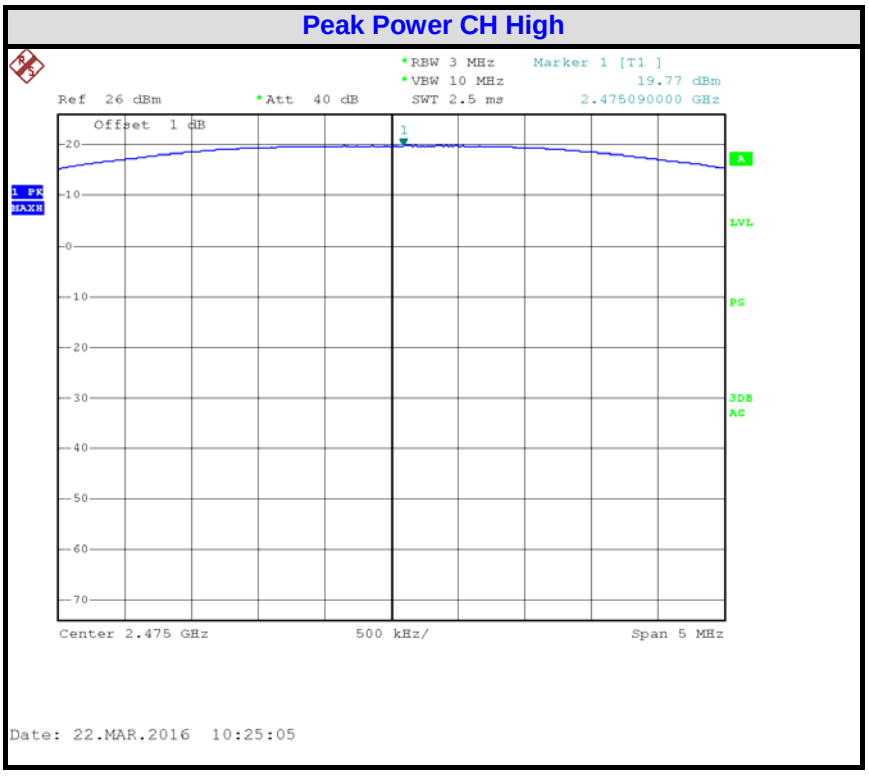


Peak Power CH Middle



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Peak Power CH High



9.0 PEAK POWER SPECTRAL DENSITY

9.1 LIMIT

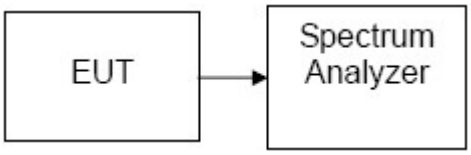
Accord to 15.247(e) and RSS-247:Issue 1 §5.2(2)

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section

9.2 MEASUREMENT EQUIPMENT USED

Peak Power Spectral Density					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03

9.3 TEST CONFIGURATION



9.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 1.5 times the bandwidth, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

9.5 TEST RESULTS

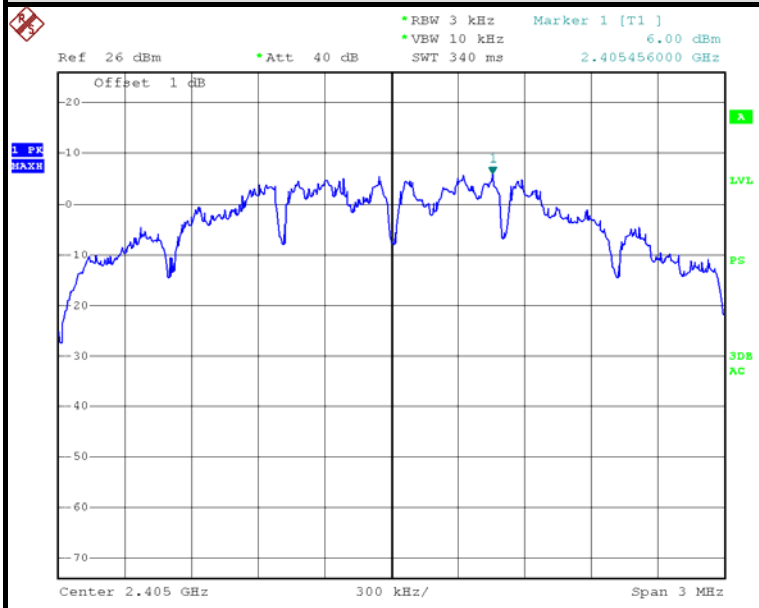
Test Data

Modulation Standard	Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
OQPSK	Low	2405	6.00	8	PASSED
	Middle	2445	5.02		PASSED
	High	2475	4.67		PASSED

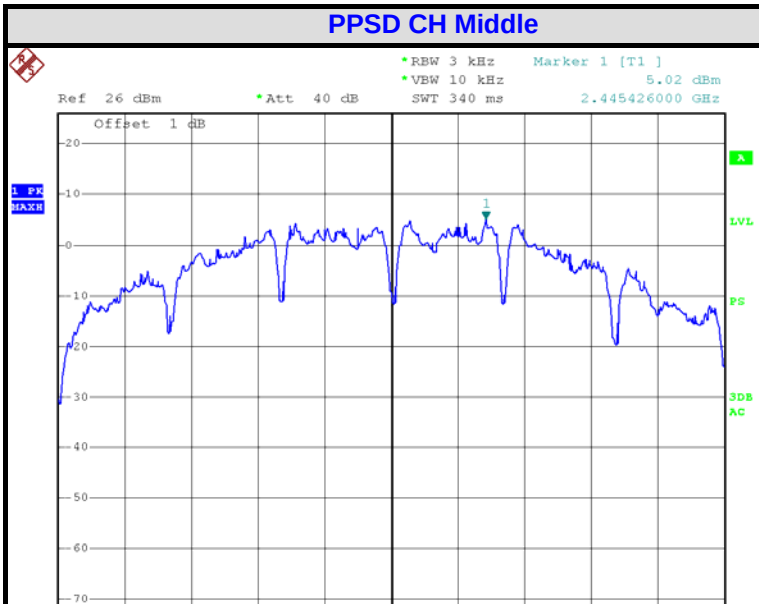
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Plot

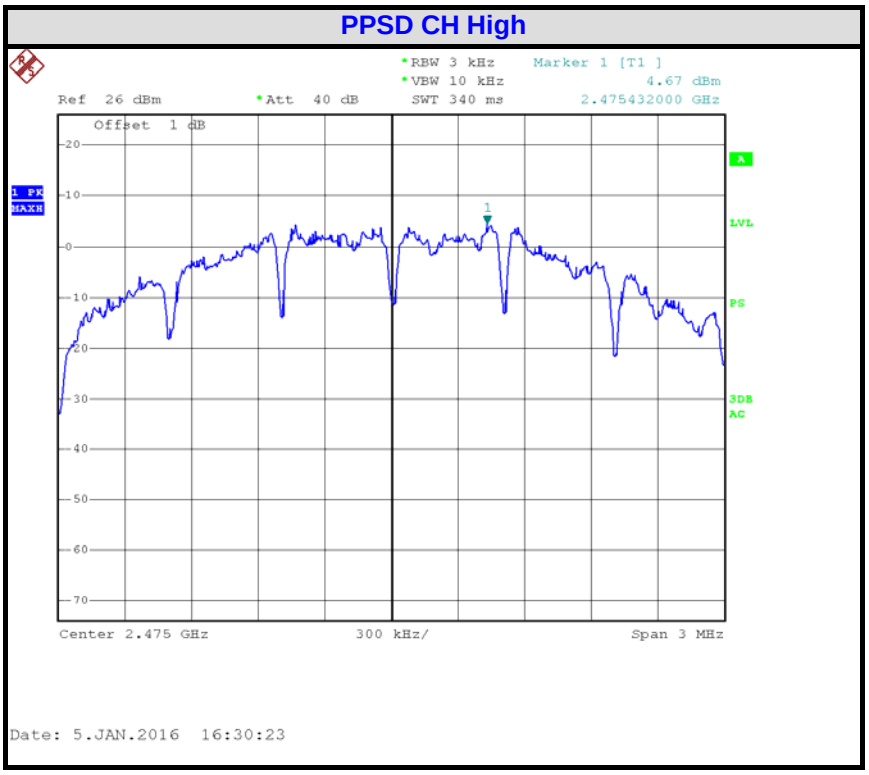
PPSD CH Low



PPSD CH Middle



PPSD CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

10.0 BAND EDGES MEASUREMENT

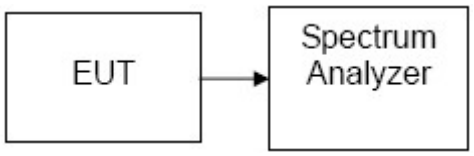
10.1 LIMIT

According to §15.247(d) and RSS-247:Issue 1 §5.5
In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

10.2 MEASUREMENT EQUIPMENT USED

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03

10.3 Test Configuration



10.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 100kHz, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are

10.5 TEST RESULTS

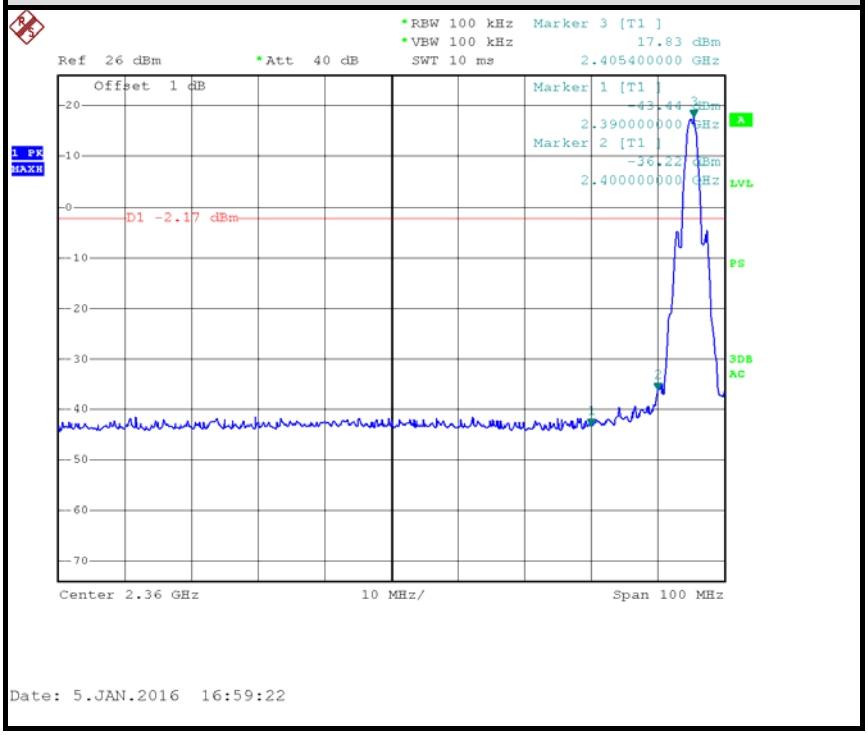
Refer to attach spectrum analyzer data chart.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Polt:

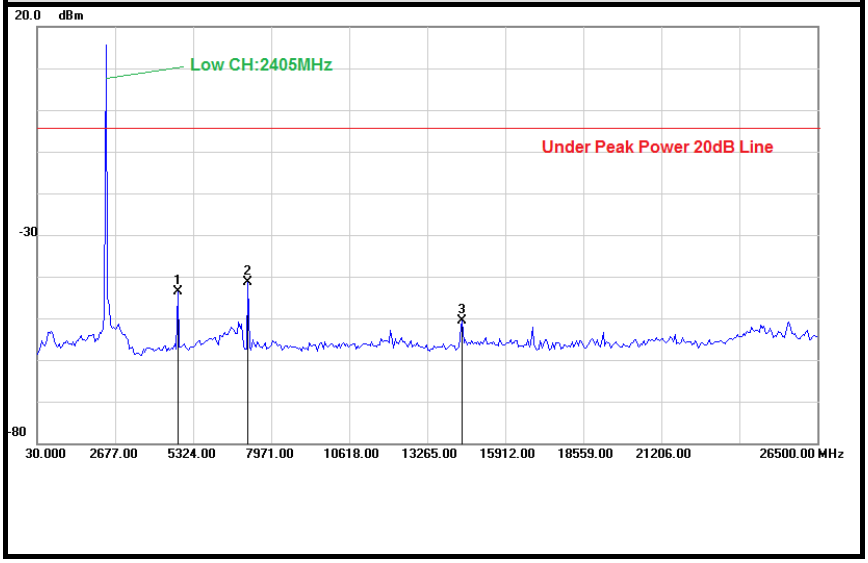
Band-edge Conducted Measurment

CH-Low:2405MHz



Spurious Emission Conducted Measurment

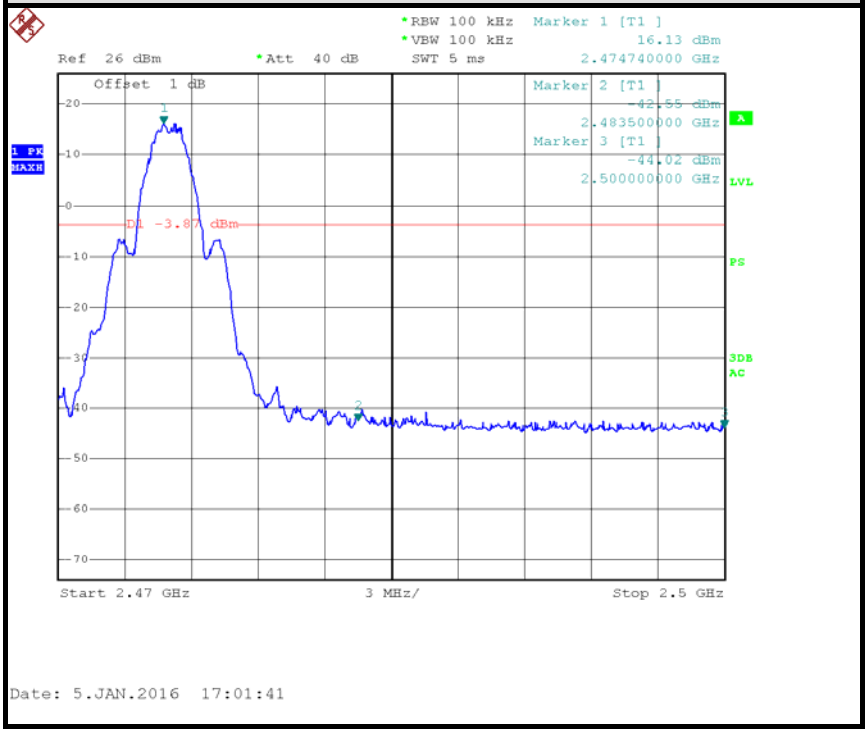
CH-Low:2405MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

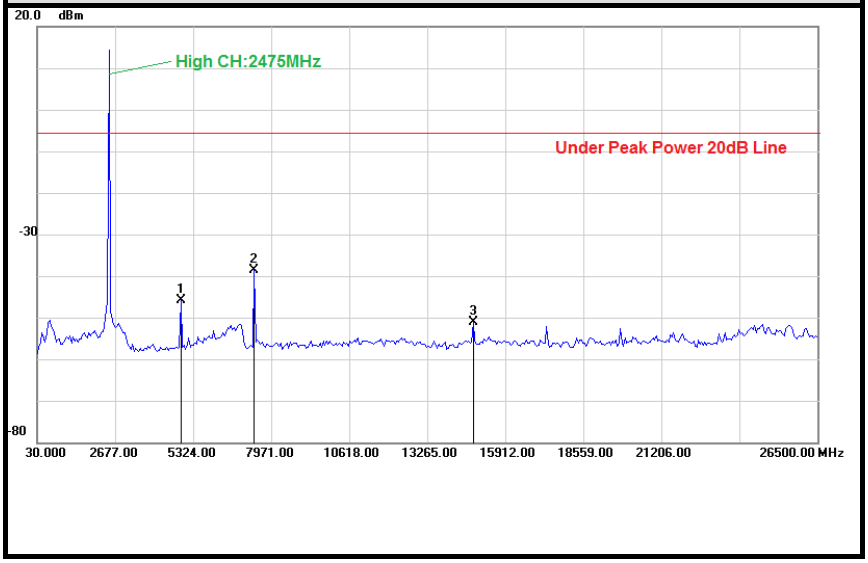
Band-edge Conducted Measurment

CH-High:2475MHz



Spurious Emission Conducted Measurment

CH-High:2475MHz

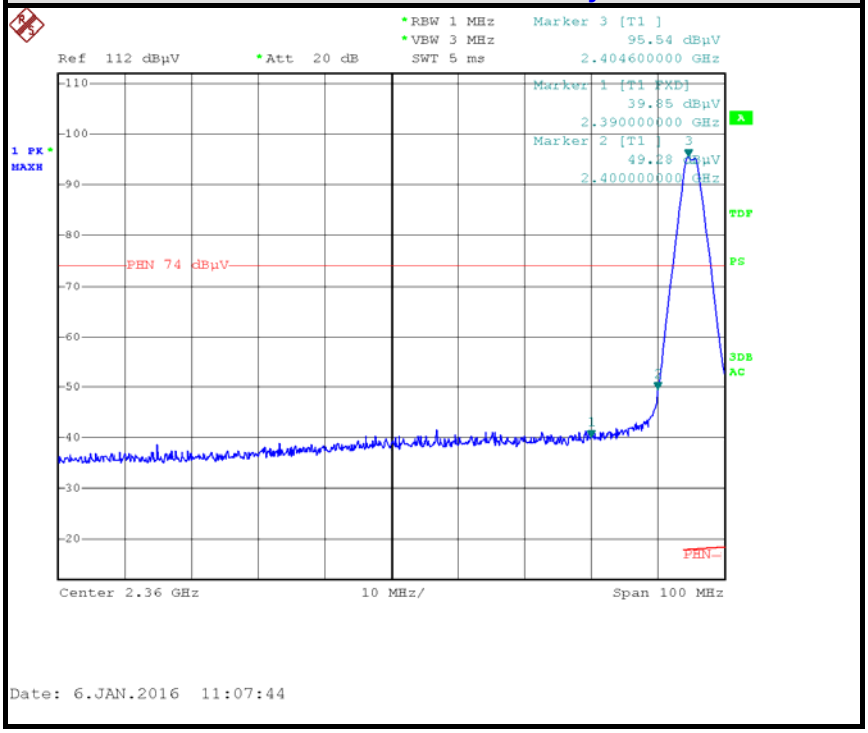


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Radiated Measurment:

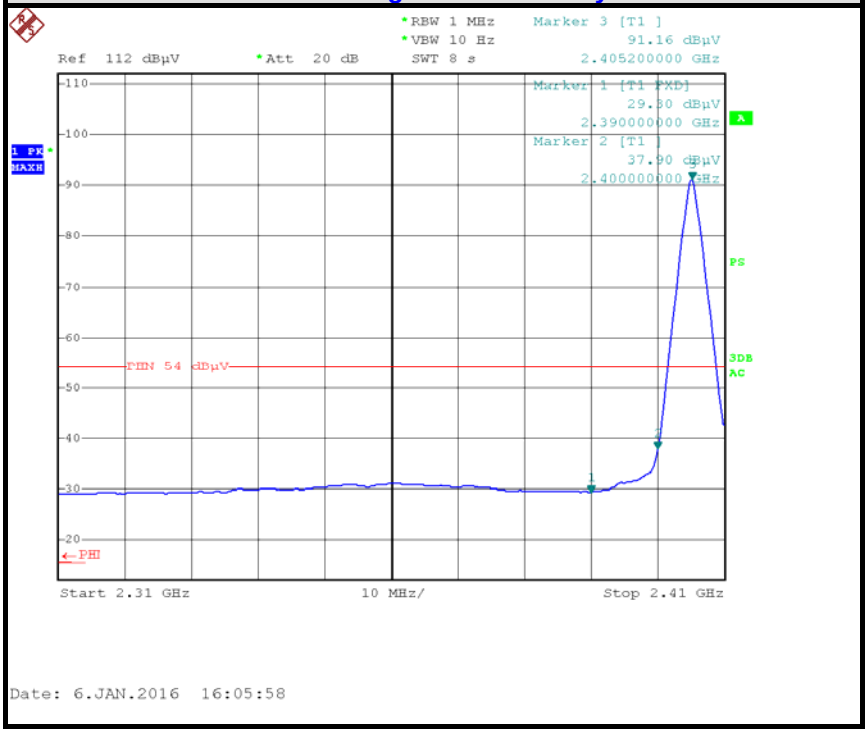
Band-edge Radiated Measurment CH-Low:2405MHz

Detector mode:Peak Polarity:Horizontal



Band-edge Radiated Measurment CH-Low:2405MHz

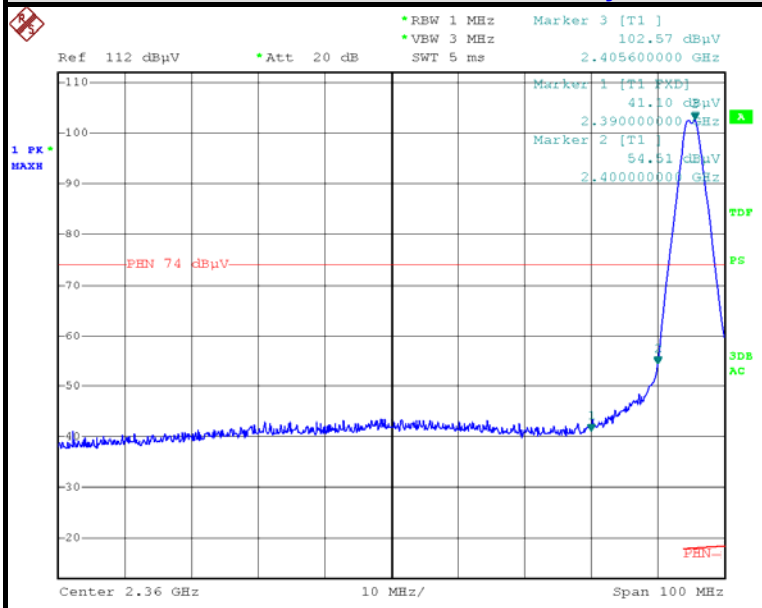
Detector mode:Average Polarity:Horizontal



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

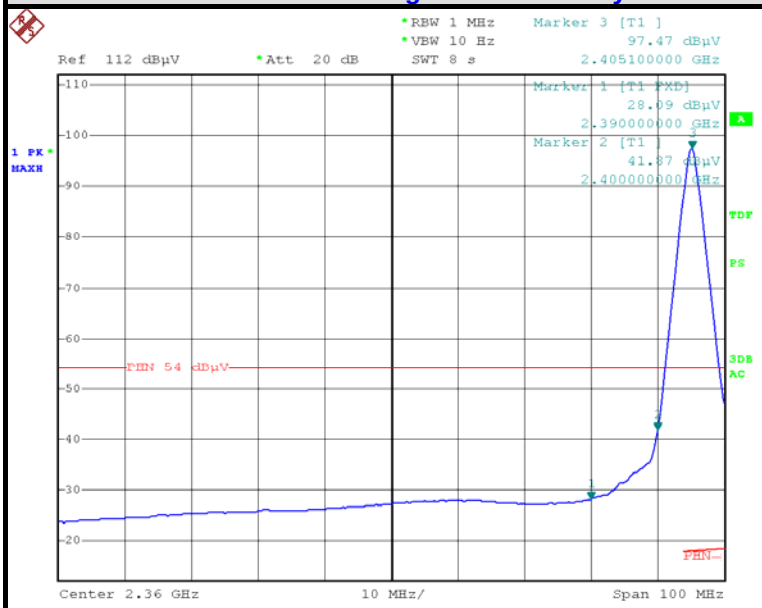
Band-edge Radiated Measurment CH-Low:2405MHz

Detector mode:Peak Polarity:Vertical



Band-edge Radiated Measurment CH-Low:2405MHz

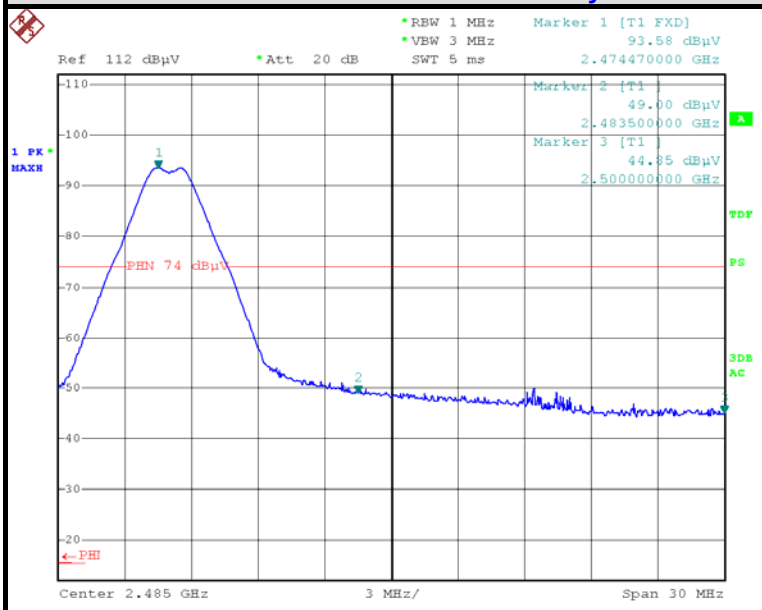
Detector mode:Average Polarity:Vertical



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

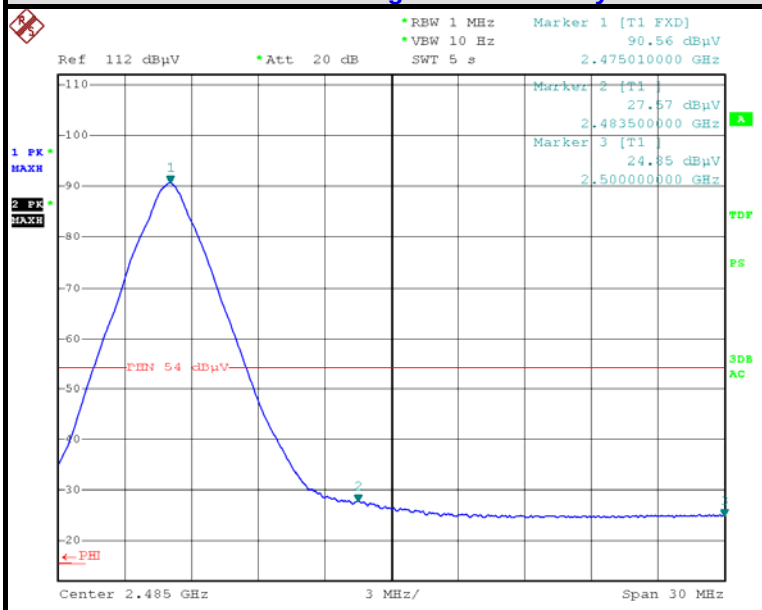
Band-edge Radiated Measurment CH-High:2475MHz

Detector mode:Peak Polarity:Horizontal



Band-edge Radiated Measurment CH-High:2475MHz

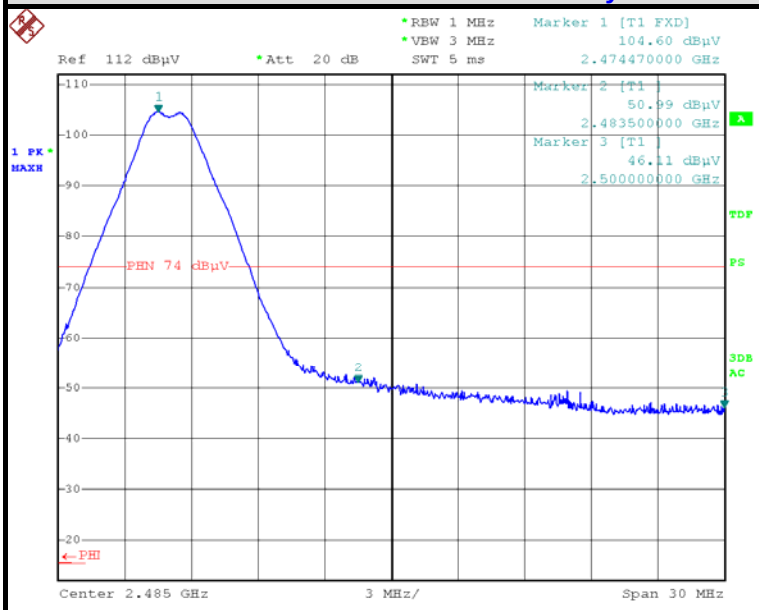
Detector mode:Average Polarity:Horizontal



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

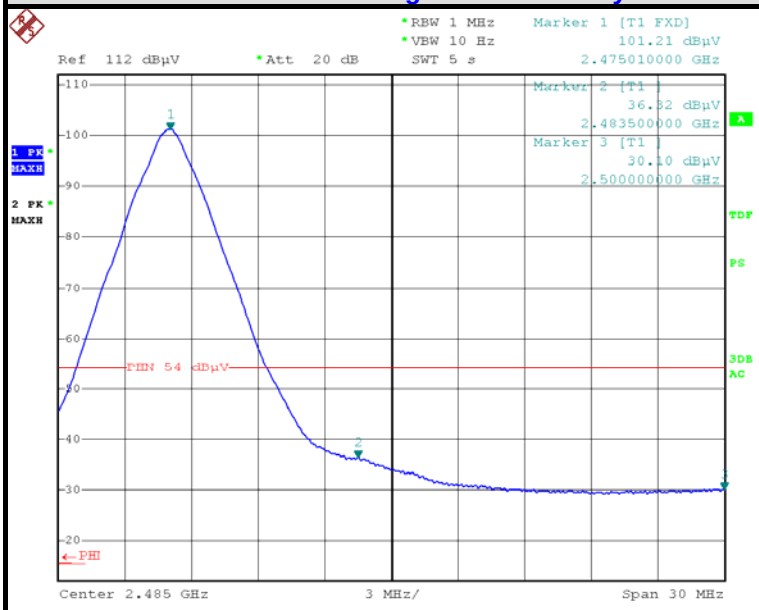
Band-edge Radiated Measurment CH-High:2475MHz

Detector mode:Peak Polarity:Vertical



Band-edge Radiated Measurment CH-High:2475MHz

Detector mode:Average Polarity:Vertical



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

11.0 SPURIOUS EMISSIONS

11.1 LIMIT

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

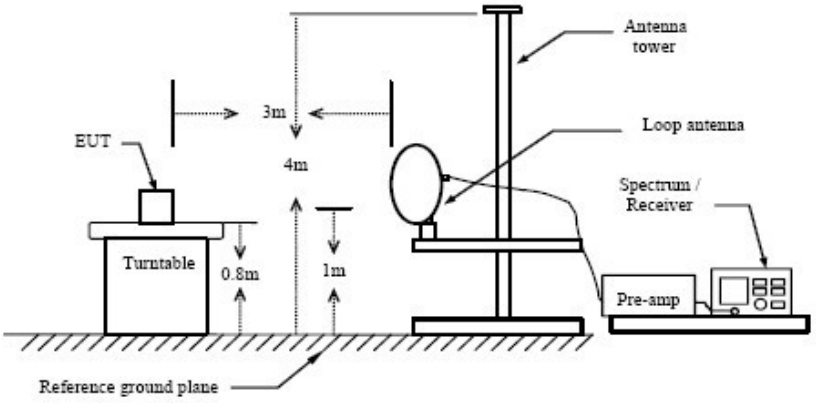
11.2 Test Equipment

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2015/10
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2015/03
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2015/03
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2015/10
7	Notch Filters	Micro-Tronics	BRM50702	169	2015/10
8	EMI Test Software	EZ-EMC	Farad	N/A	N/A

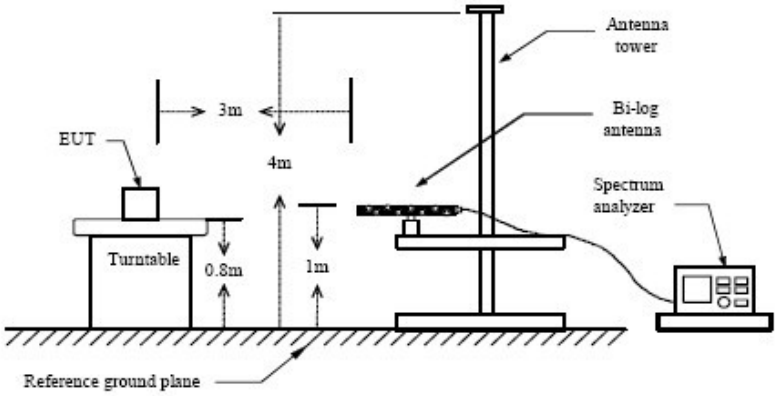
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

11.3 TEST CONFIGURATION

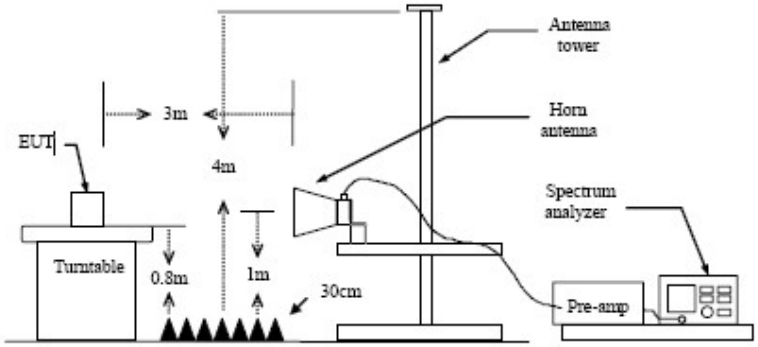
Below 30MHz



Below 1 GHz



Above 1 GHz



11.4 TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

11.5 TEST RESULTS

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

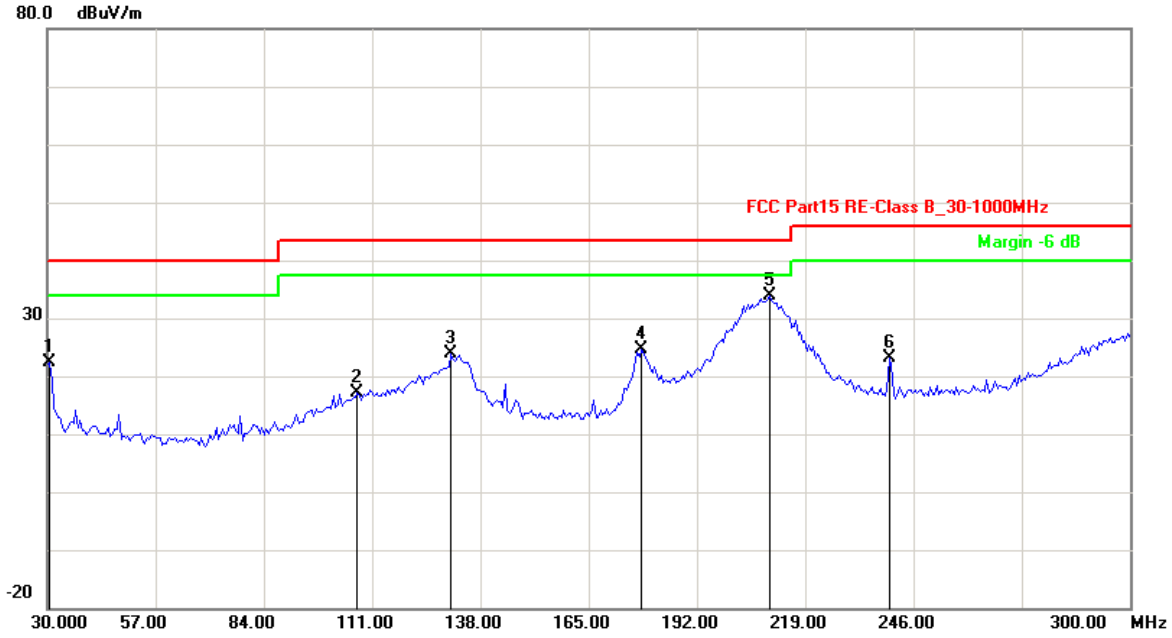
Test Mode: Frequency range:	TX –X Position Mode 9KHz~30MHz	Result:	■ - passed □ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Remark: The test result reading value is to low, margin all > 10dB of the limit.							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

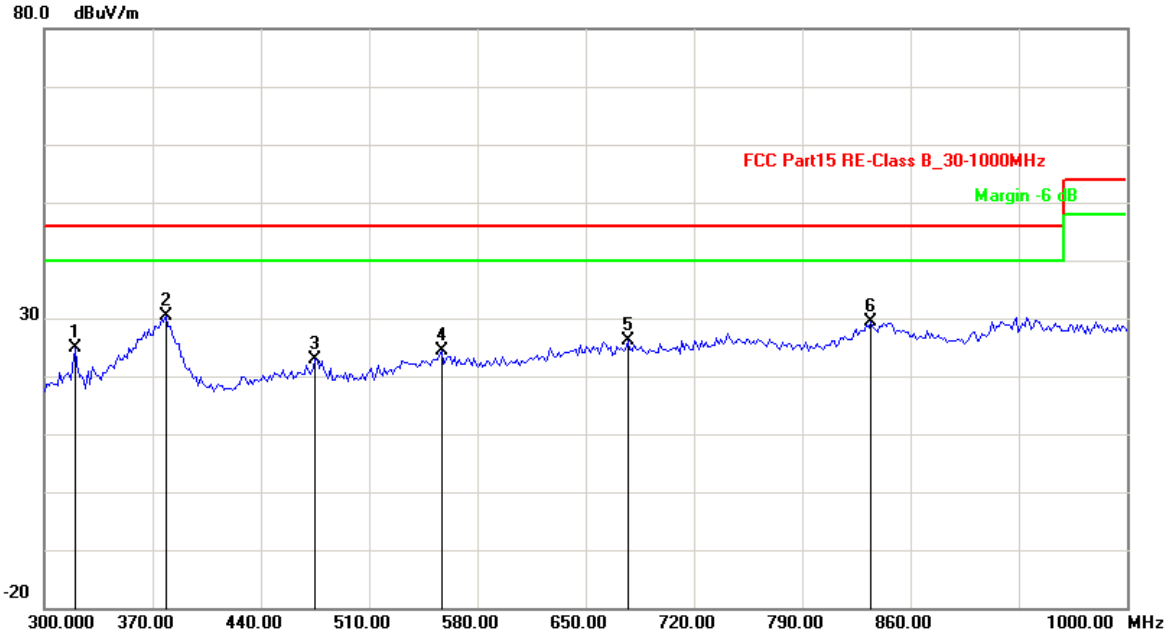
EUT	6BEE
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	04~06 January 2015
Operator	**Duke**
MODEL NO	6B_CC2530V3

Channel: Test point: Frequency range:	TX –X Position Horizontal 30MHz-1GHz	Result:	■ - passed □ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	30.5411	-16.11	38.49	22.38	40.00	-17.62	QP
2	107.3747	-17.54	34.67	17.13	43.50	-26.37	QP
3	130.6413	-16.13	39.95	23.82	43.50	-19.68	QP
4	178.2565	-15.32	40.01	24.69	43.50	-18.81	QP
5	210.1804	-10.20	43.99	33.79	43.50	-9.71	QP
6	239.9399	-11.56	34.67	23.11	46.00	-22.89	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	319.6393	-12.73	37.55	24.82	46.00	-21.18	QP
2	378.5571	-10.87	41.27	30.40	46.00	-15.60	QP
3	475.3507	-8.29	31.09	22.80	46.00	-23.20	QP
4	556.7134	-5.66	30.06	24.40	46.00	-21.60	QP
5	677.3547	-3.49	29.66	26.17	46.00	-19.83	QP
6	834.4689	-1.22	30.68	29.46	46.00	-16.54	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel:	Low Channel	Result:	■ - passed □ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1987.976	-9.31	47.69	38.38	74.00	-35.62	peak
2	1987.976	-9.31	34.00	24.69	54.00	-29.31	AVG
3	7215.401	9.23	37.94	47.17	74.00	-26.83	peak
4	7215.401	9.23	27.71	36.94	54.00	-17.06	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	Middle Channel	Result:	■ - passed □ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

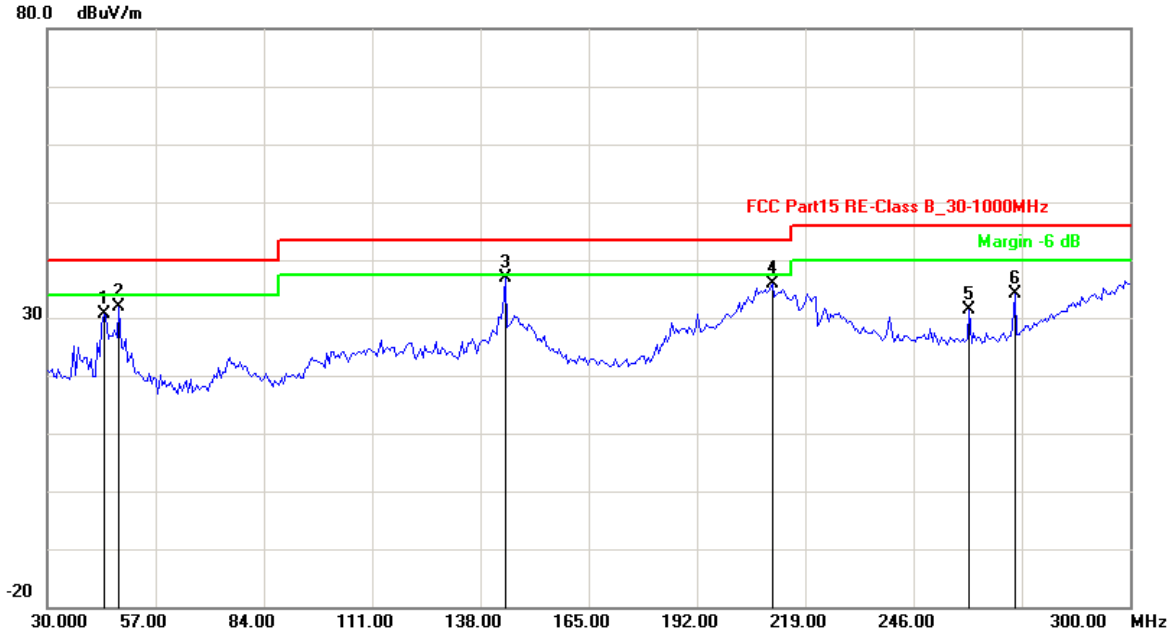
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1306.613	-14.29	46.78	32.49	74.00	-41.51	peak
2	1306.613	-14.29	31.88	17.59	54.00	-36.41	AVG
3	7336.673	9.68	40.23	49.91	74.00	-24.09	peak
4	7336.673	9.68	30.45	40.13	54.00	-13.87	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	High Channel	Result:	■ - passed □ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

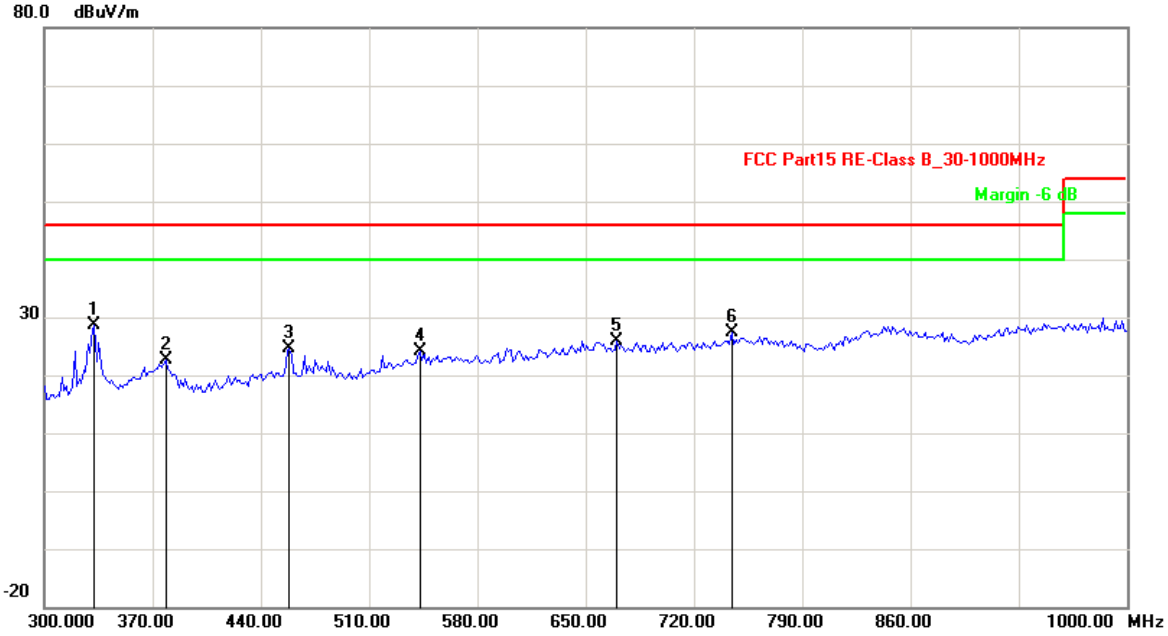
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1476.954	-12.74	41.30	28.56	74.00	-45.44	peak
2	1476.954	-12.74	28.12	15.38	54.00	-38.62	AVG
3	7425.878	10.01	39.33	49.34	74.00	-24.66	peak
4	7425.878	10.01	30.04	40.05	54.00	-13.95	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel:	TX –X Position	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	44.0681	-17.85	48.54	30.69	40.00	-9.31	QP
2	47.8557	-18.34	50.19	31.85	40.00	-8.15	QP
3	144.1683	-16.01	52.98	36.97	43.50	-6.53	QP
4	210.7214	-10.24	46.07	35.83	43.50	-7.67	QP
5	259.9599	-10.81	42.25	31.44	46.00	-14.56	QP
6	271.3226	-9.74	43.79	34.05	46.00	-11.95	QP
Remark: Other frequency mini margin all >6 dB of Limit							



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	332.2645	-12.16	40.79	28.63	46.00	-17.37	QP
2	378.5571	-10.87	33.57	22.70	46.00	-23.30	QP
3	458.5170	-8.40	33.07	24.67	46.00	-21.33	QP
4	542.6854	-6.04	30.13	24.09	46.00	-21.91	QP
5	670.3407	-3.43	29.35	25.92	46.00	-20.08	QP
6	744.6894	-1.82	29.14	27.32	46.00	-18.68	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel:	Low Channel	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1987.976	-9.31	50.33	41.02	74.00	-32.98	peak
2	1987.976	-9.31	35.70	26.39	54.00	-27.61	AVG
3	7215.401	9.23	40.50	49.73	74.00	-24.27	peak
4	7215.401	9.23	30.35	39.58	54.00	-14.42	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	Middle Channel	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1919.840	-9.76	55.00	45.24	74.00	-28.76	peak
2	1919.840	-9.76	41.02	31.26	54.00	-22.74	AVG
3	7336.673	9.68	41.18	50.86	74.00	-23.14	peak
4	7336.673	9.68	30.51	40.19	54.00	-13.81	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	High Channel	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1987.976	-9.31	53.40	44.09	74.00	-29.91	peak
2	1987.976	-9.31	39.76	30.45	54.00	-23.55	AVG
3	7425.878	10.01	39.93	49.94	74.00	-24.06	peak
4	7425.878	10.01	29.74	39.75	54.00	-14.25	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Note:Level=Reading+Factor. Margin= Level-Limit

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

12.0 RECEIVER SUPRIOUS EMISSION

12.1 LIMIT

According to RSS-Gen Issue 4§7.0.Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

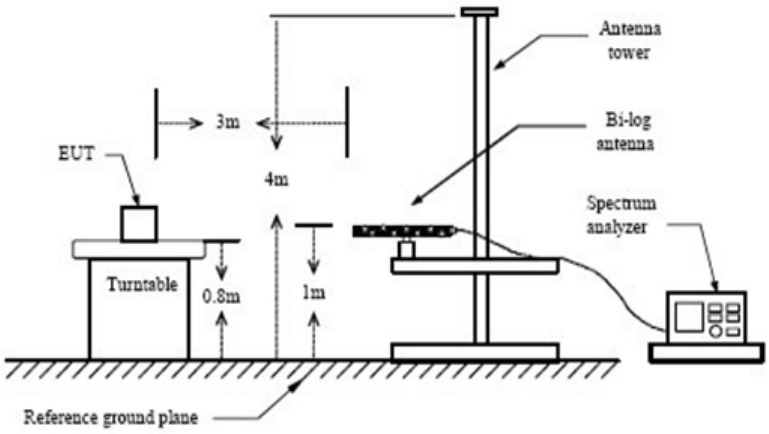
12.2 TEST EQUIPMENT

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2015/10
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2015/03
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2015/03
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2015/10
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A

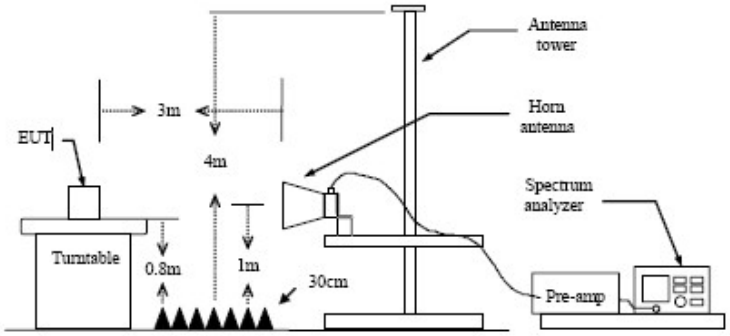
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

12.3 TEST CONFIGURATION

Below 1 GHz



Above 1 GHz



12.4 TEST PROCEDURE

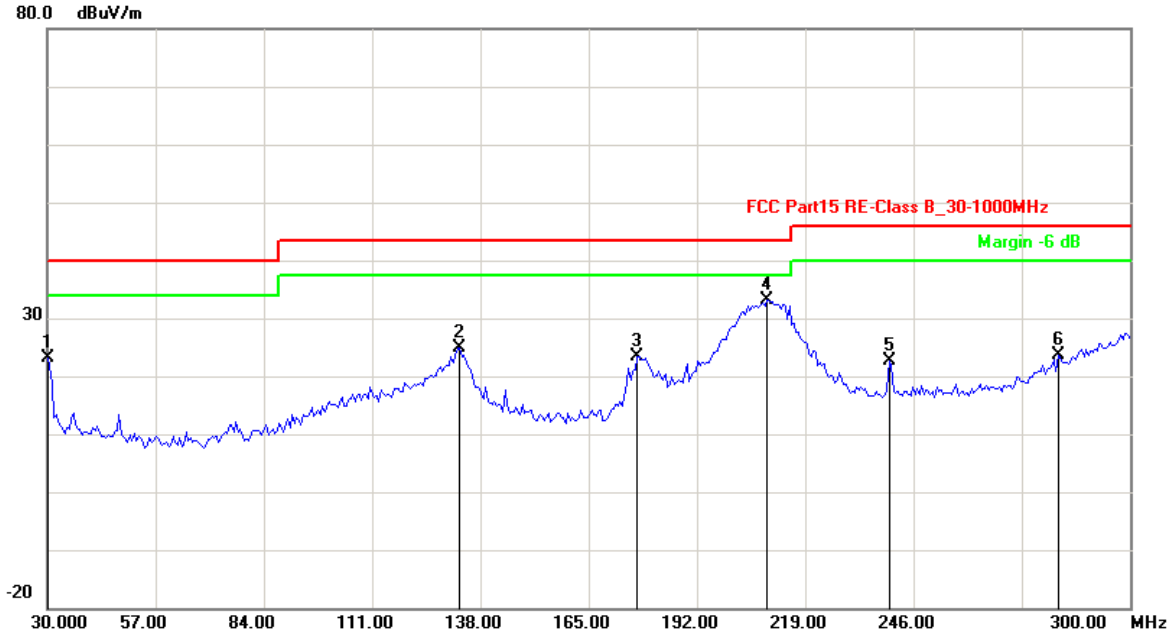
1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

12.5 TEST RESULTS

The frequency range from 30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

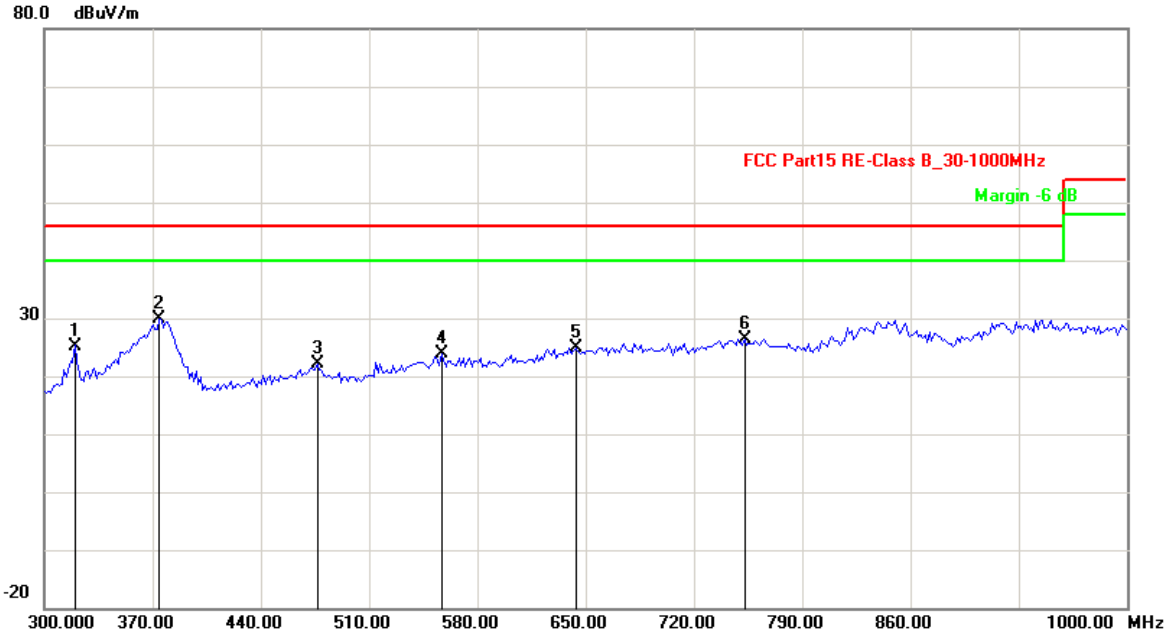
EUT	6BEE
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	04~06 January 2015
Operator	**Duke**
MODEL NO	6B_CC2530V3

Channel: Test point: Frequency range:	RX Horizontal 30MHz-1GHz	Result:	■ - passed □ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	30.0000	-16.04	39.12	23.08	40.00	-16.92	QP
2	132.8056	-16.11	41.09	24.98	43.50	-18.52	QP
3	177.1743	-15.41	38.82	23.41	43.50	-20.09	QP
4	209.6393	-10.27	43.33	33.06	43.50	-10.44	QP
5	239.9399	-11.56	34.21	22.65	46.00	-23.35	QP
6	282.1443	-6.45	30.01	23.56	46.00	-22.44	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



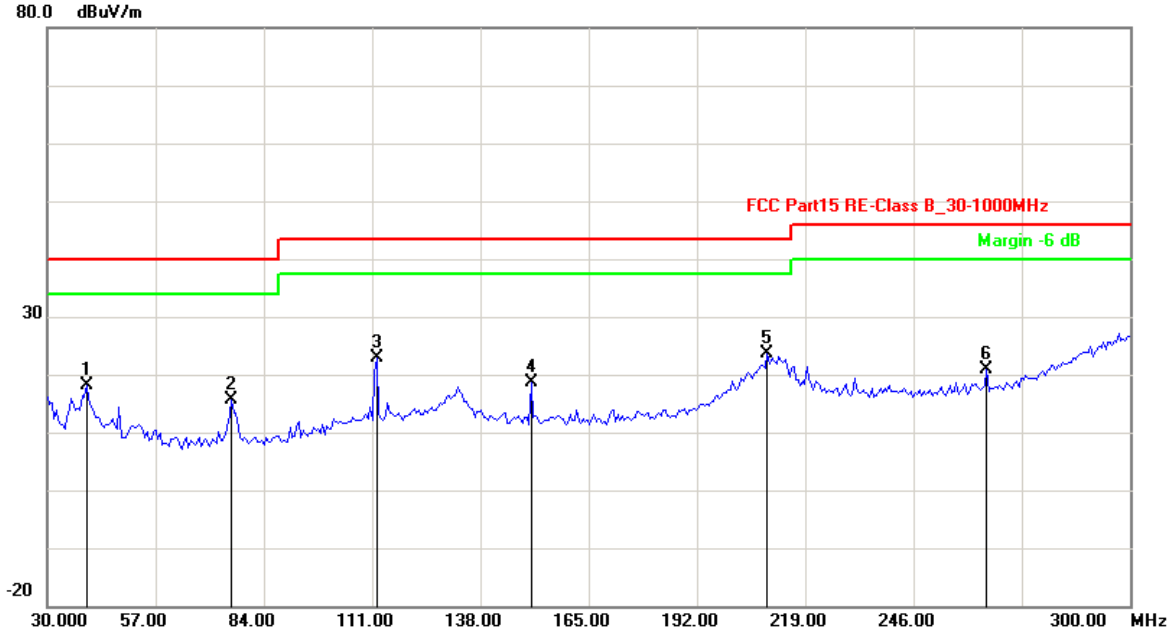
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	319.6393	-12.73	37.98	25.25	46.00	-20.75	QP
2	374.3487	-10.94	40.86	29.92	46.00	-16.08	QP
3	476.7535	-8.28	30.52	22.24	46.00	-23.76	QP
4	556.7134	-5.66	29.61	23.95	46.00	-22.05	QP
5	643.6874	-3.52	28.39	24.87	46.00	-21.13	QP
6	753.1062	-1.70	28.18	26.48	46.00	-19.52	QP
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	RX	Result:	■ - passed □ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1715.431	-11.11	35.59	24.48	74.00	-49.52	peak
2	1715.431	-11.11	21.37	10.26	54.00	-43.74	AVG
3	8529.058	12.38	27.63	40.01	74.00	-33.99	peak
4	8529.058	12.38	14.00	26.38	54.00	-27.62	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

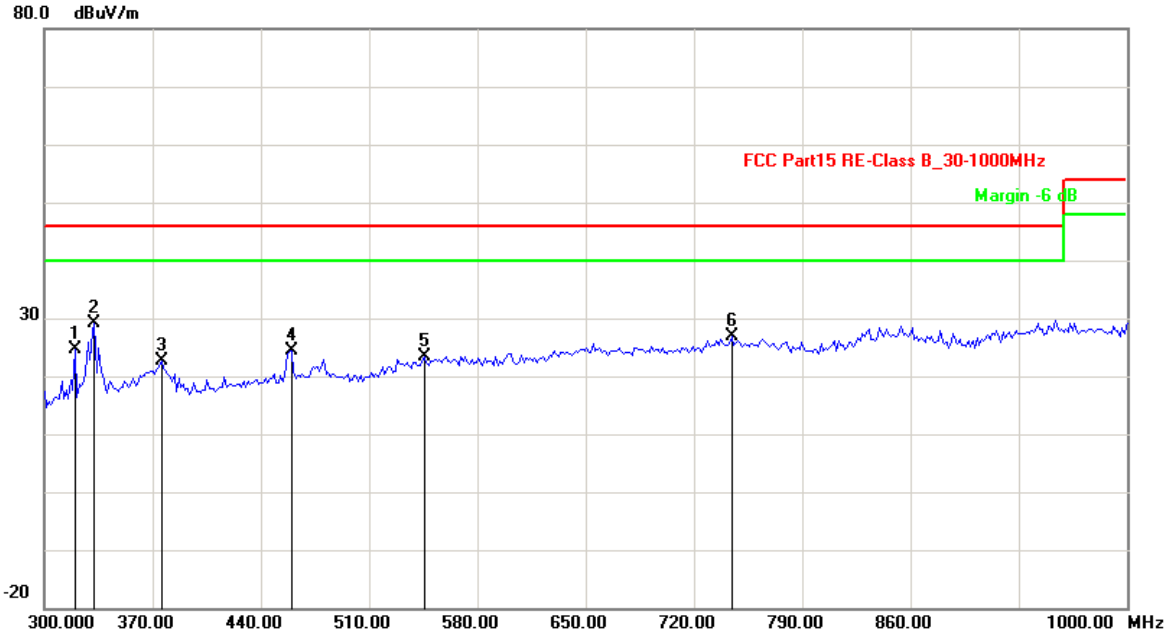
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel:	RX	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	39.7395	-17.30	35.46	18.16	40.00	-21.84	QP
2	75.9920	-20.27	35.83	15.56	40.00	-24.44	QP
3	112.2445	-17.17	40.10	22.93	43.50	-20.57	QP
4	150.6613	-15.96	34.51	18.55	43.50	-24.95	QP
5	209.6393	-10.27	33.89	23.62	43.50	-19.88	QP
6	264.2886	-10.52	31.33	20.81	46.00	-25.19	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	319.6393	-12.73	37.38	24.65	46.00	-21.35	QP
2	332.2645	-12.16	41.21	29.05	46.00	-16.95	QP
3	375.7515	-10.92	33.53	22.61	46.00	-23.39	QP
4	459.9198	-8.39	32.79	24.40	46.00	-21.60	QP
5	545.4910	-5.90	29.25	23.35	46.00	-22.65	QP
6	744.6894	-1.82	28.59	26.77	46.00	-19.23	QP
Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	RX	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1817.635	-10.43	37.88	27.45	74.00	-46.55	peak
2	1817.635	-10.43	22.79	12.36	54.00	-41.64	AVG
3	8426.854	12.17	28.84	41.01	74.00	-32.99	peak
4	8426.854	12.17	14.21	26.38	54.00	-27.62	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

Note:Level=Reading+Factor. Margin= Level-Limit

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

13. 99% OCCUPIED BANDWIDTH

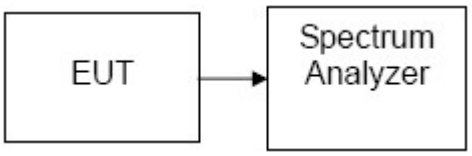
13.1 TEST PROCEDUR

According to RSS-210 Annex 8 and RSS-Gen 6.6 The EUT RF output is connected to the spectrum analyzer. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual. The sweep time is coupled.

13.2. TEST EQUIPMENT

Band Edge Compliance test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03
2	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03

13.3 TEST CONFIGURATION



13.4 TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT, then connect a low loss RF cable from antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Span=10MHz, Sweep = auto.
4. Mark the peak frequency and set 99% occupied bandwidth function on spectrum.
5. Repeat until all the test channels are investigated.

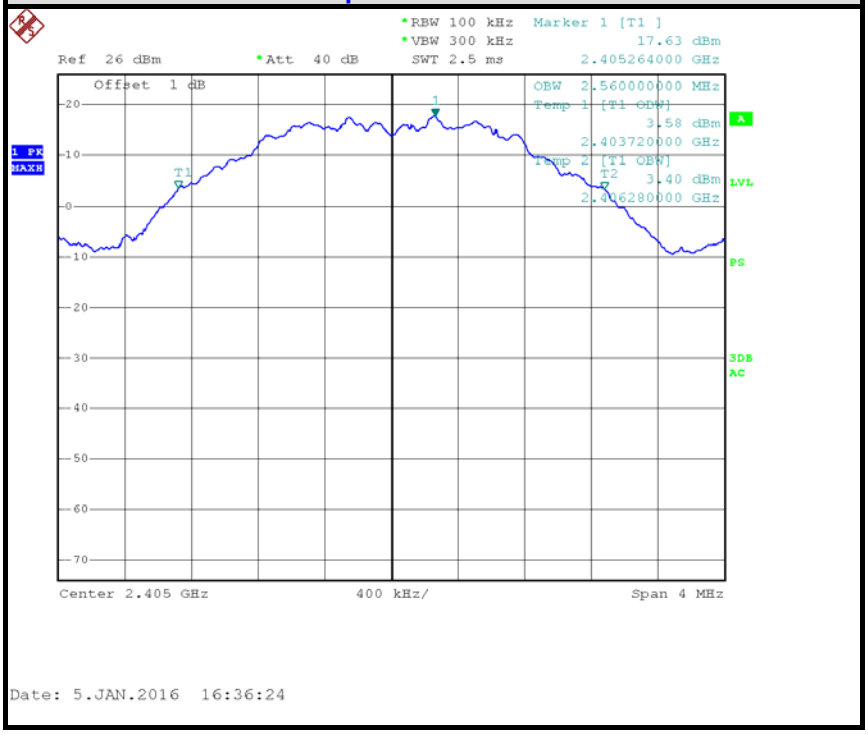
13.5 TEST RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)	Limit (dBm)	Result
Low	2405	2.560	-----	PASS
Middle	2445	2.552	-----	PASS
High	2475	2.536	-----	PASS

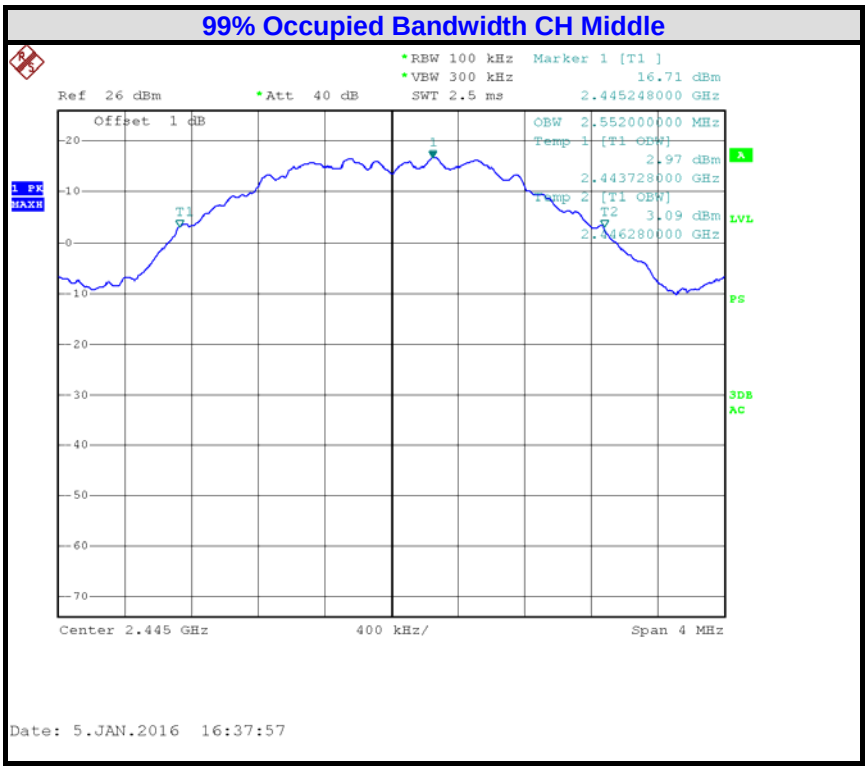
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Plot

99% Occupied Bandwidth CH Low

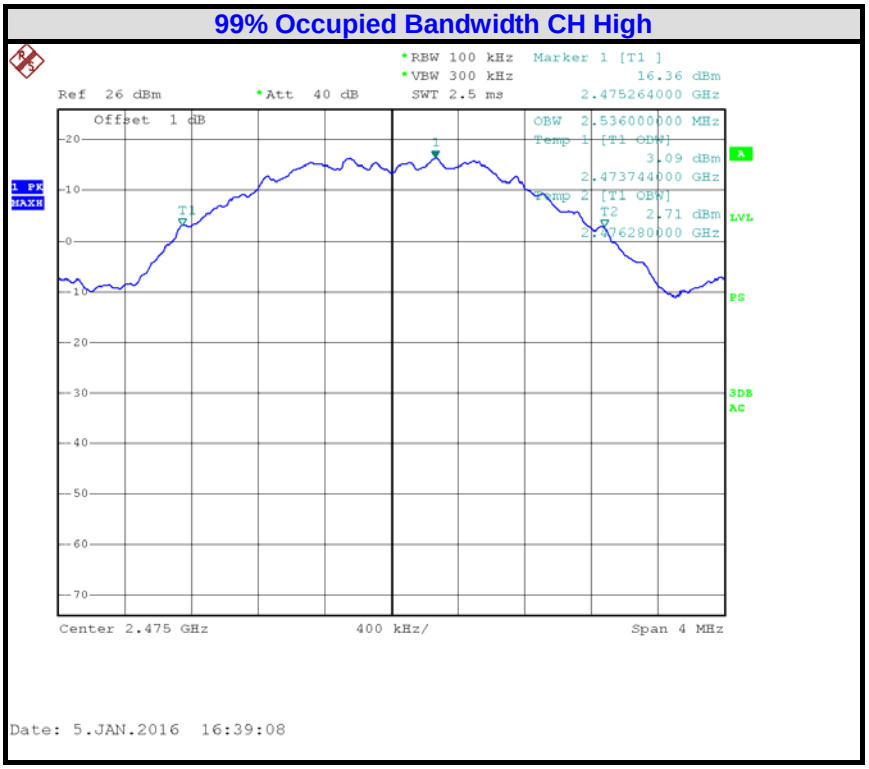


99% Occupied Bandwidth CH Middle



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

99% Occupied Bandwidth CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

14.0 Antenna Requirements

14.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

14.2 Antenna Construction and Directional Gain

Antenna type: PCB Antenna
Antenna Gain: 0 dBi

15.0 Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: **6BEE**
Model name: **6B_CC2530V3**

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn